



Standard Test Method for Evaluation of Engine Oils in Diesel Four-Stroke Cycle Supercharged 1M-PC Single Cylinder Oil Test Engine¹

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INTRODUCTION

This test method can be used by any properly equipped laboratory, without outside assistance. However, the ASTM Test Monitoring Center (TMC)² provides reference oils and an assessment of the test results obtained on those oils by the laboratory. By this means, the laboratory will know whether their use of the test method gives results statistically similar to those obtained by other laboratories. Furthermore, various agencies require that a laboratory utilize the TMC services in seeking qualification of oils against specifications. For example, the U.S. Army imposes such a requirement, in connection with several Army engine lubricating oil specifications.

Accordingly, this test method is written for use by laboratories that utilize the TMC services. Laboratories that choose not to use those services may simply ignore those portions of the test method that refer to the TMC.

This test method may be modified by means of Information Letters issued by the TMC. In addition, the TMC may issue supplementary memoranda related to the test method.

1. Scope

1.1 This test method covers a four-stroke cycle diesel engine test procedure for evaluating engine oils for certain high-temperature performance characteristics, particularly ring sticking, ring and cylinder wear, and accumulation of piston deposits. Such oils include both single viscosity SAE grade and multiviscosity SAE grade oils used in diesel engines. It is commonly known as the 1M-PC test (PC for Pre-Chamber) and is used in several API oil categories, notably the CF and CF-2 and the military category described in MIL-PRF-2104 (see Note 1).

NOTE 1—Companion test methods used to evaluate other engine oil performance characteristics for API oil categories CF and CF-2 are discussed in SAE J304. The companion tests used by the military can be found in MIL-PRF-2104.

1.2 The values stated in either SI units or other units are to be regarded separately as the standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other, without combining values in any way.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

1.4 This test method is arranged as follows:

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¹ This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.B on Automotive Lubricants. The test engine sequences were originally developed in 1956 by ASTM Committee D-2. Subsequently, the procedures were published in an ASTM Special Technical Publication.

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